

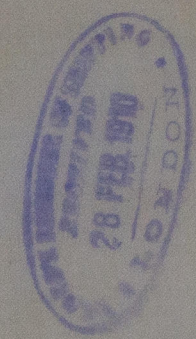


WS20-0069

Profile

2.2.1.2  
238.

RETAIN



Class: Foyds Register  
Scale: 1 Foot.



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Foundation



7-3-10.

# - S.S. No 238 - Profile.

Rule Length 401'0", Breadth 52'3 1/2", Depth mid to Upperd 31'0", Depth mid to Bridged 39'0".

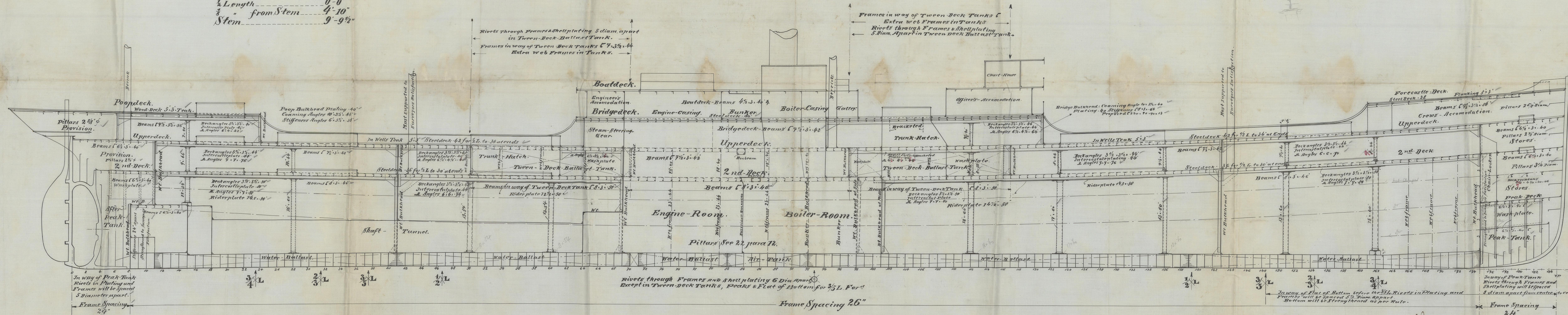
Breadth 52'29 1/4"	Breadth to Length 7'67"
Depth 31'00"	Depth to Length to Upperdeck 12'94"
Length x 83'29 1/4" Transvers No	" " " " Bridgedeck 10'28"
33399.97 Longitudinal No	Depth (d) for frames 19'20"

Class: Lloyd's Register 100 A1 Steel.

Scale 1/8" = 1 Foot.

Special Deck plan and plan of Tween-Deck Ballast Tanks will be submitted.

**Sheer:**  
 Sternpost 3'5"  
 1/2 Length from Sternpost 1'8"  
 1/2 Length 0'0"  
 1/2 " from Stem 4'10"  
 Stem 9'9 1/2"





Profile as built

SS

ARSTERTUR M

RETAIN

Copy as Built

Copy of Plans

As examined  
for Builders





# S.S. 238 "ARSTERTUM". PROFILE.

RULE LENGTH 461'-0", BREADTH 52'-3", DEPTH MID TO UPPER DECK 31'-0", DITTO TO BRIDGE DECK 39'-0".

BREADTH.....	52.2917	BREADTH TO LENGTH.....	7.67
DEPTH.....	+ 31.0	DEPTH TO LENGTH TO UPPER DECK.....	12.94
TRANSV. NELS.....	83.2217	..... BRIDGE DECK.....	10.28
LENGTH.....	461.0	DEPTH, d, FOR FRAMES.....	19'-2"
LONGITUD. NELS.....	33399.97		

CLASS: LLOYDS REGISTER + 100 A1 STEEL.

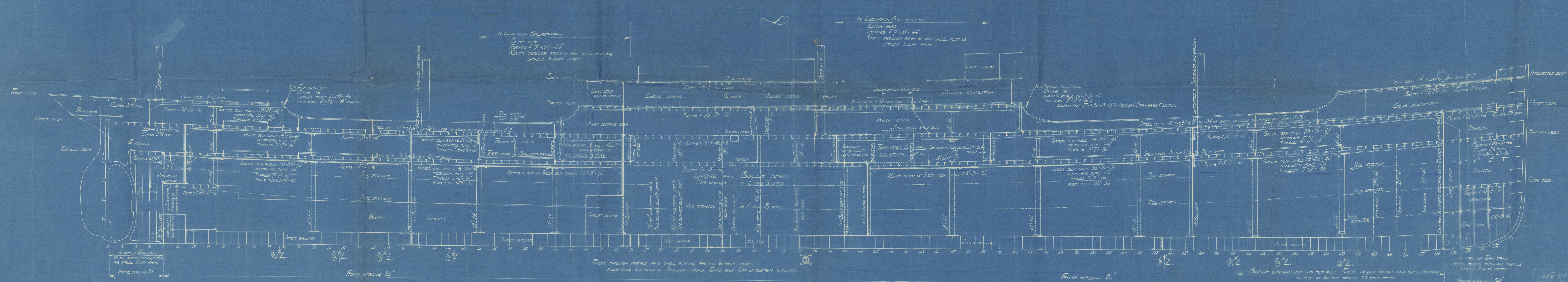
SCALE  $\frac{1}{8}$ " = 1 FOOT.

## NOTICE.

SPECIAL DECK PLANS AND PLAN OF TWEEN-DECK BALLAST-TANKS TO BE SUBMITTED.

## SHEER

AT STERNPOST.....	3'-5"
..... 3' LENGTH FROM STERNPOST.....	1'-8"
..... 3' LENGTH.....	9'-7"
..... 3' LENGTH FROM STEM.....	4'-10"
..... STEM.....	9'-9"



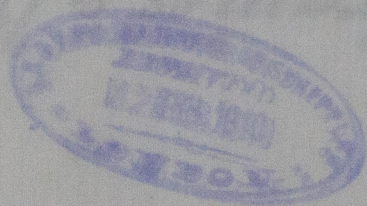
118,145-90  
JOHN C. TUCKERBORG & CO.  
ENGINEERS AND ARCHITECTS  
BALTIMORE, MARYLAND  
1914



W520-0074

Deck Plans

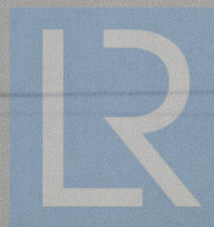




S.S. 238.

Scale 1:200

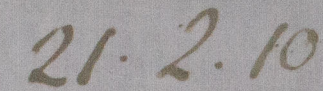
Arrangement of Steel decks, Webframes &c. 2500



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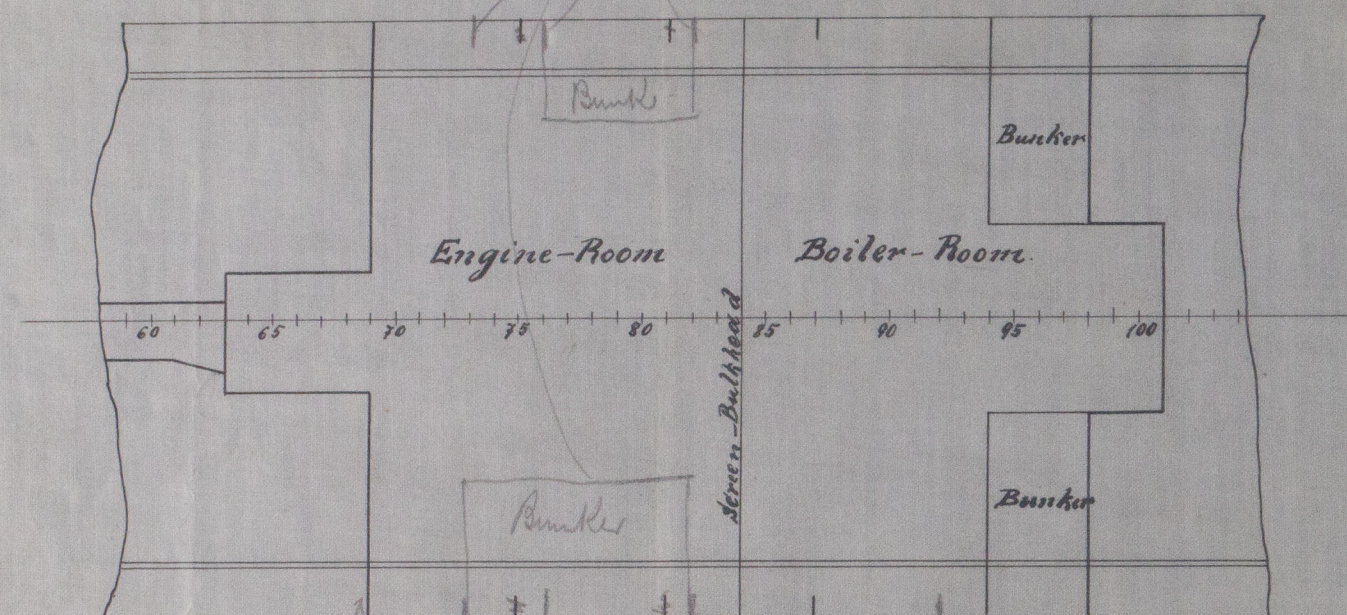




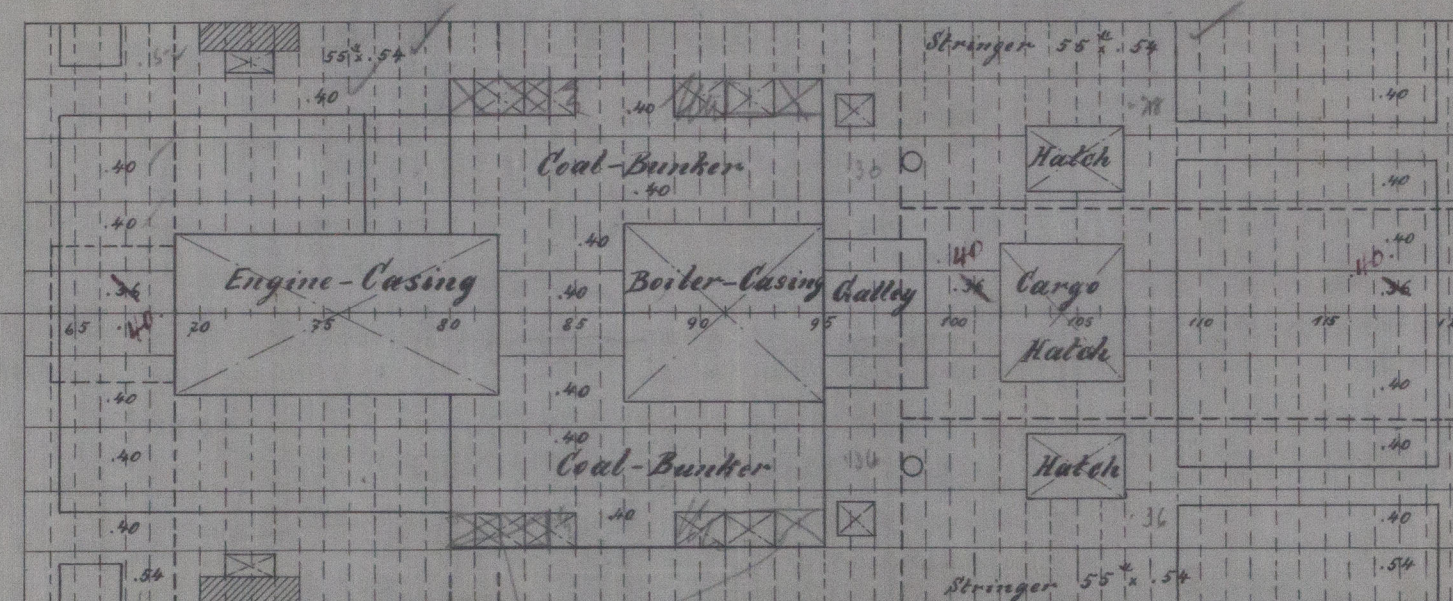
*Arrangement of Steeldecks, Webframes & Bulkheads.*

*Scale 1:200*

### Double-Bottom



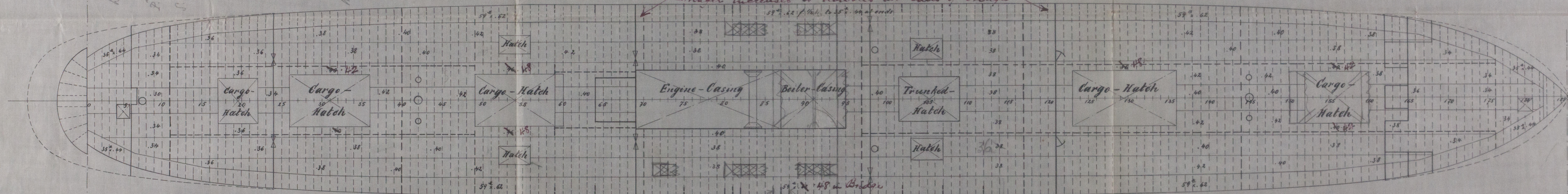
Bridge deck



*All corner's of Hatches & Casing to be strengthened  
with Doubling-Plates as per Rule.  
Hatch-Weds as per Rule.*

Upper deck

Upper deck  
Strips increased or doubled at ends of bridge



2<sup>nd</sup> Deck

$$\frac{3}{4}L$$
$$\frac{2}{3}L$$
$$\frac{3}{5}L$$
$$\frac{1}{2} | L$$

mev

5

三

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900

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med

 $\frac{1}{2} |$ 

2

$$\frac{3}{4} \mid L$$

No. 37688.

9 Feb 12.

1. 1992

WS 20-2019  
Foundation



Midship Section

RETAIN

Boardwalk

0° 5'

0° 5'

Moog Inc

WS20-0078



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Foundation



SS. 238.

# Midship-Section.

Rule Length 401'0", Breadth 52'3 1/2" Depth m<sup>ld</sup> to Upperdeck 31'0" ditto to Bridgedeck 39'0"

Breadth 52.2947  
Depth 31.0  
Length 83.2947 Transverse N°  
401.0  
33399.97 Longitudinal N°

Breadth to Length . . . . . 7.67  
Depths " " to Upperd<sup>ks</sup> 12.94  
" " " Bridged<sup>ks</sup> 10.23  
Depth(d) for frames 19'2"

**Equipment**  
Under Deck . . . . . 33399.97  
3/4 Poop Bridge & Forecastle 134.70  
1/2 Casings . . . . . 202.796-83  
3/4 Deckhouse . . . . . 147.94  
Numerical . . . . . 33076.27  
35216.91

3 Rover Anchors stockless Collective weight 182 Cwts  
1 Stream Anchor ink Stock 21-3-12  
1 Kedge Anchor " " 9-1-14  
270 Fathoms Stud-chain cable 2 1/4" diam  
90 " 1 1/2" chain 81 1/2" diam  
120 Fathoms Steel Tonnage 5" Circumf.  
2 x 90 " Hempen Hawser 8" " "  
2 x 90 " " " 8" " "

Double Buttstraps where Sheerstrake above .34" thick.

Scale 1/2" = 1'

**Hatches**  
Length Sides Ends  
40' 10" 18' 36" 36"  
24' 8" 39' 44" 40"  
28' 2" 39' 44" 40"  
17' 7" 34' 44" 40"

**Hatches**  
Length Sides Ends  
40' 10" 18' 36" 36"  
24' 8" 39' 44" 40"  
28' 2" 39' 44" 40"  
17' 7" 34' 44" 40"

**Upper Deck from within Bridge to ends**  
Length of beam 51' 6" 1/2 L 34' 6" 1/2 L 25' 6"  
Beam Spacing 26 inches 26 inches 24 inches  
Pillars Two Rows Two Rows One Row  
Beams 7 1/2 x 3 x 42 7 x 3 x 42 6 1/2 x 3 x 40  
" " Knees 22 x 42 22 x 42 22 x 42  
Hatch Beams ditto ditto ditto  
Stringer Plate 39" .62 for 1/2 L to 35" .44 at ends  
Stringer Angles 5 x 5 .66 to 48 (under erection) 3 x 3 .48 .48 .48  
Deck Steel .42 for 1/2 L to 34 at ends Teak .3" wide  
Riveting: Butts of Stringer Plate lapped treble riveted full length  
" " Deck Plating double for 1/2 L, Ends single

**2<sup>nd</sup> Deck**  
Length of beam 51' 9" 1/2 L 34' 6" 1/2 L 25' 6"  
Beam Spacing 26 inches 26 inches 24 inches  
Pillars Two Rows Two Rows One Row  
Beams 7 1/2 x 3 x 42 7 x 3 x 42 6 1/2 x 3 x 40  
" " Knees 22 x 42 22 x 42 22 x 42  
Hatch Beams ditto ditto ditto  
Stringer Plate 39" .62 for 1/2 L to 35" .44 at ends  
Stringer Angles 5 x 5 .66 to 48 (under erection) 3 x 3 .48 .48 .48  
Deck Steel .42 for 1/2 L to 34 at ends Teak .3" wide  
Riveting: Butts of Stringer Plate lapped treble riveted full length  
" " Deck Plating double for 1/2 L, Ends single

For Spacing and Dimensions of wide spaced hollow Pillars and girders see Longitudinal Plan.

**Stringer in Holds**  
Stringer Angles 6 x 3 .42 .50 .50  
Interstall plate .44  
" " angle 3 1/2 x 3 1/2 .44

**Riveting of Butts of Outside Plating**  
Keel plate double Straps treble riveted, Ends quadruple lapped  
Sheerstrake where above .34" double straps treble riveted. Remainder of Shell plating quadruple lapped for 1/2 L, treble at ends.  
Bridge Side plating double Straps treble riveted  
Poop and Forecastle double riveted buttlaps

**Double Riveting of Landing edges**  
Sheerstrake treble lapped where above .34" double straps  
All other landing edges double riveted  
Poop & Forecastle " " single riveted  
Rivet spacing in frames 6 inches diam.

Rise of Tanktop 3"

Plating attached to Propeller Post of midship thickness  
Boss Plates .74

**Beam Spacing**  
Pillars 52 inches 26 inches 32 inches  
Beams 2 rows 2 1/2 dia 2 rows widely sp 2 rows 2 1/2 diam  
" Knees 24 x 34 22 x 42 24 x 34  
Stringer Plate 35 x 34 35 x 34 35 x 34  
Angles 3 1/2 x 3 1/2 .34 5 x 5 .60 3 1/2 x 3 1/2 .34  
Gutter " 9" .34 round S's St. Bk .40 St. Bk .28 round S's  
Deck .38 (2 Strakes) .66 (1 Strake) .40 (2 Strakes)  
Side Plating Butts double Butts single  
Deck " " " double " single

Upperdeck within 1/2 Breadth of Bridge Bulkhead  
Stringer Plate 59" .52 .148  
Steel Deck .38  
Stringer Angle 3 1/2 x 3 1/2 .48 .44

Rule Bulbangles		German Standard Sections	
Size	Moments of Resistance	Size	Moments of Resistance
inches	inches	Millimeter	inches
7 x 3 .42	7.636	100 .80 x 115 .415	8.482
7 x 3 1/2 .44	7.997	100 .80 x 115 .415	8.482
7 1/2 x 3 .42	8.839	200 .85 x 12 .42	10.86
8 x 3 .46	10.823	200 .85 x 12 .42	10.86
9 x 3 1/2 .52	16.68	270 .95 x 14 .44	18.12
10 x 3 1/2 .56	19.479	270 .95 x 14 .44	19.22
11 x 3 1/2 .58	21.774	260 .95 x 13 .43	21.799

Webplates in Engine & Boiler Space 23 .44 See Profile  
Frames to Webs 3 1/2 x 3 1/2 .44  
Fore Angles to Webs 7 x 3 1/2 .64  
Stringer Plate 27 x 42 flanged  
" " Buttlaps 48 x 7 .56  
Interstall Angles 3 1/2 x 3 1/2 .44

**Frame Spacing**  
Frames 26 inches  
Webrframes 23" .44  
Floors 45" .48  
Transom plate 10 1/2 x 7 1/2 and 9" 7 1/2 (See special plan)  
Stern frame 10 1/2 x 7 1/2 and 9" 7 1/2 (See special plan)  
Rudder as per Tables 22, 23, 24  
Bridge Bulkhead Coaming Angle 10" .32 .44 Plating .40  
Stiffeners 8 x 3 .44 (proposed) 120 .90 .13 .13  
Poop Bulkhead Coaming Angle 10" .34 .44 Plating .40  
Stiffeners Angles 6 x 3 1/2 .38  
Tunnel Plating .36 Top Plating under Hatches .46  
Stiffeners angles 3 1/2 x 3 1/2 .48 .44 52" apart under hatches .36"

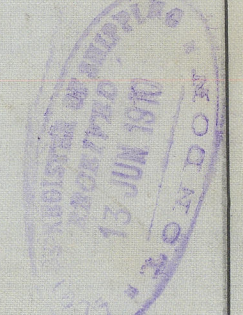
## Cellular Double Bottom

Plating	1/2 L	Ends	Engine	Boiler Sp	Angles	1/2 L	Ends	Boiler Sp
Centre Girder	43 x 50	40	50	60	Centre girder Top	3 1/2 x 3 1/2 .50	46	60
Side Girders	40	36	40	50	" " Bottom	4 1/2 x 4 1/2 .60	54	60
Floors	40	36	40	50	" " Vertical	6 x 6 .46	3 1/2 x 3 1/2 .60	50
Brackets at Margin Pl	40	36	40	50	Side girders Top	3 1/2 x 3 1/2 .40	36	50
Margin Plate	40	36	40	50	" " Bottom	3 1/2 x 3 1/2 .40	36	50
Classical End Refr.	40	36	40	50	" " Vertical	3 x 3 .40	36	50
Middleline Strake	43 x 50	40	50	60	Margin Plate " "	6 x 6 .46	3 1/2 x 3 1/2 .60	50
Side Strakes	40	36	40	50	" " Bottom angle	4 x 4 .48	48	50
					Frames	3 1/2 x 3 1/2 .40	36	50
					Reverse frames	3 1/2 x 3 1/2 .40	36	50

Riveting: Butts of Centre girder, Margin plate and Middleline strake treble lapped full length, butts of Tanktop treble lapped in Engine & Boiler Space. Double lapped in Holds for 1/2 L, single at ends.  
Edges of Middleline strake double full length  
" " Tanktop double in E & B spaces, single in Holds.

Double frames on Tanktop forward of 1/2 L am  
Double reverse frames in Engine Space and under Boiler bearers

21. 2. 10  
7. 3. 10  
15. 6. 10





WS20-0071

SS

ARSTERTURM

Handwritten Section  
as built

Copy as Built

and as recommended  
for Bundles

RETTAIN



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2  
20

2  
10



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Steel-Boiler for ship 238.

Heating surface \_\_\_\_\_ 2108 square feet.  
Grate \_\_\_\_\_ 50,5 " "  
Working pressure \_\_\_\_\_ 213 lbs. per sq. inch  
Hydraml . . . . . 285 " " " "

to be classed 100 A, steel.

Brerckoven - Geestminder.

№: 331 - 32 - 33.

1:10.

Klein Baskin

Material: Siemens Martin-Steel.

Shell plating and girders tensile strength of 27,2-33 tons per sq. inch.  
Elongation 22,5 per cent.

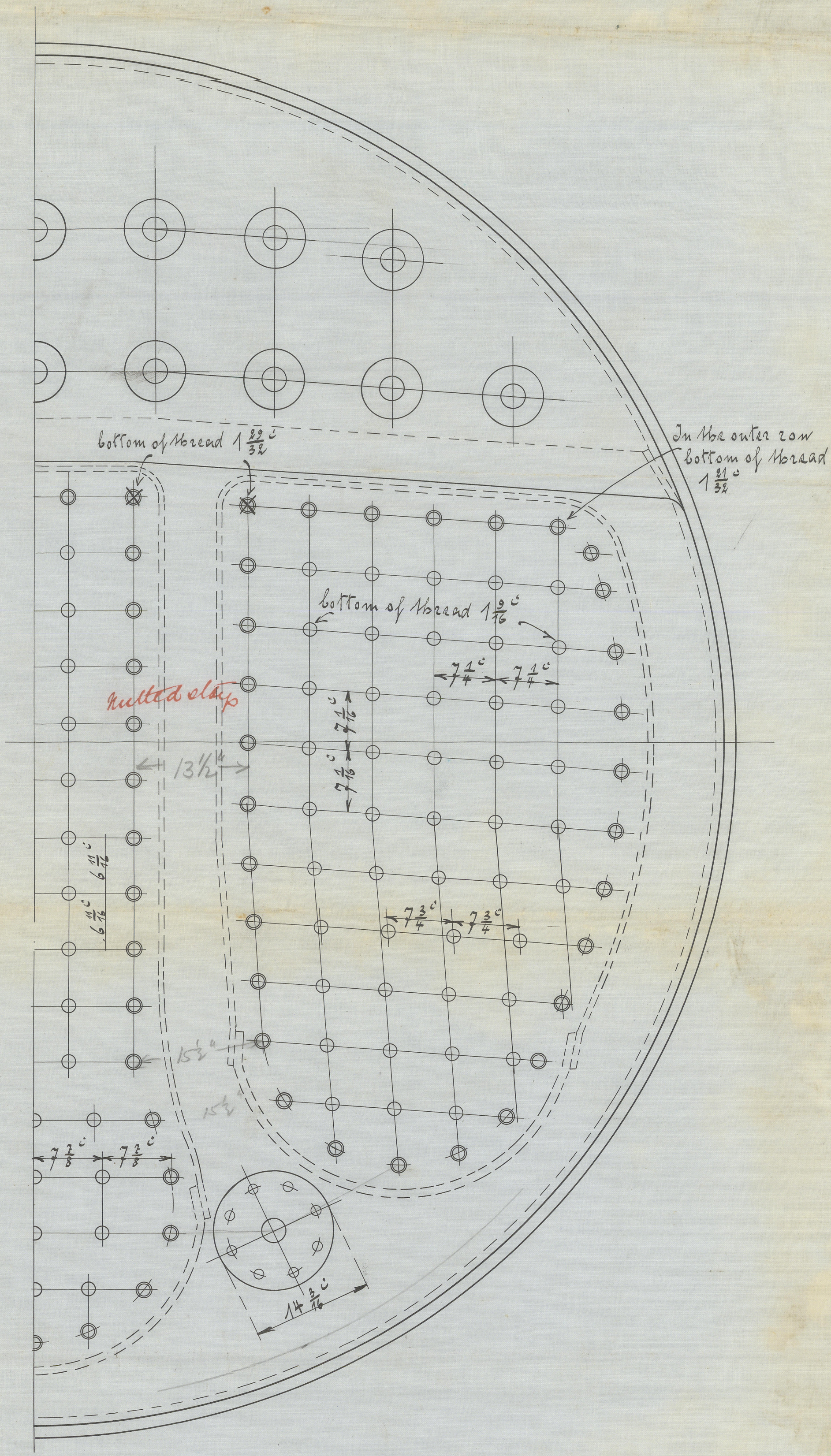
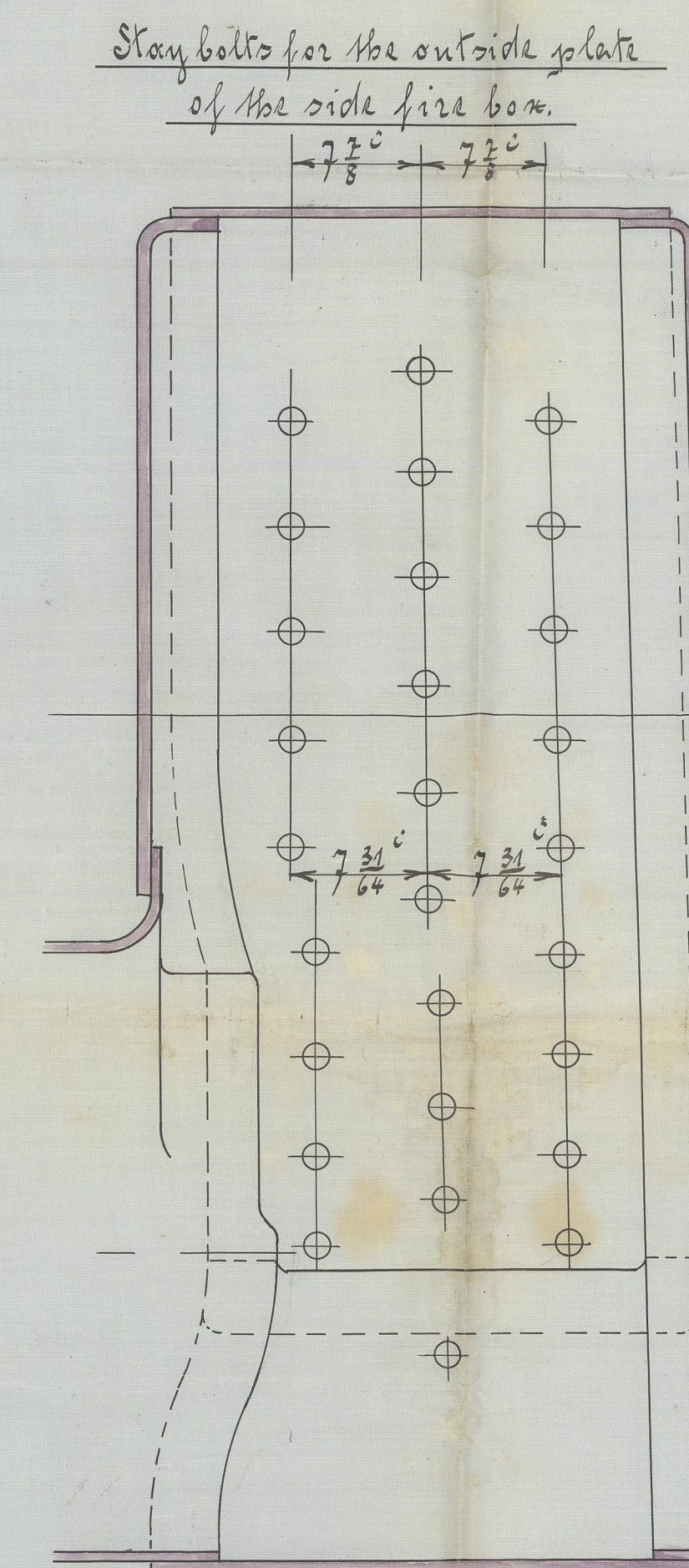
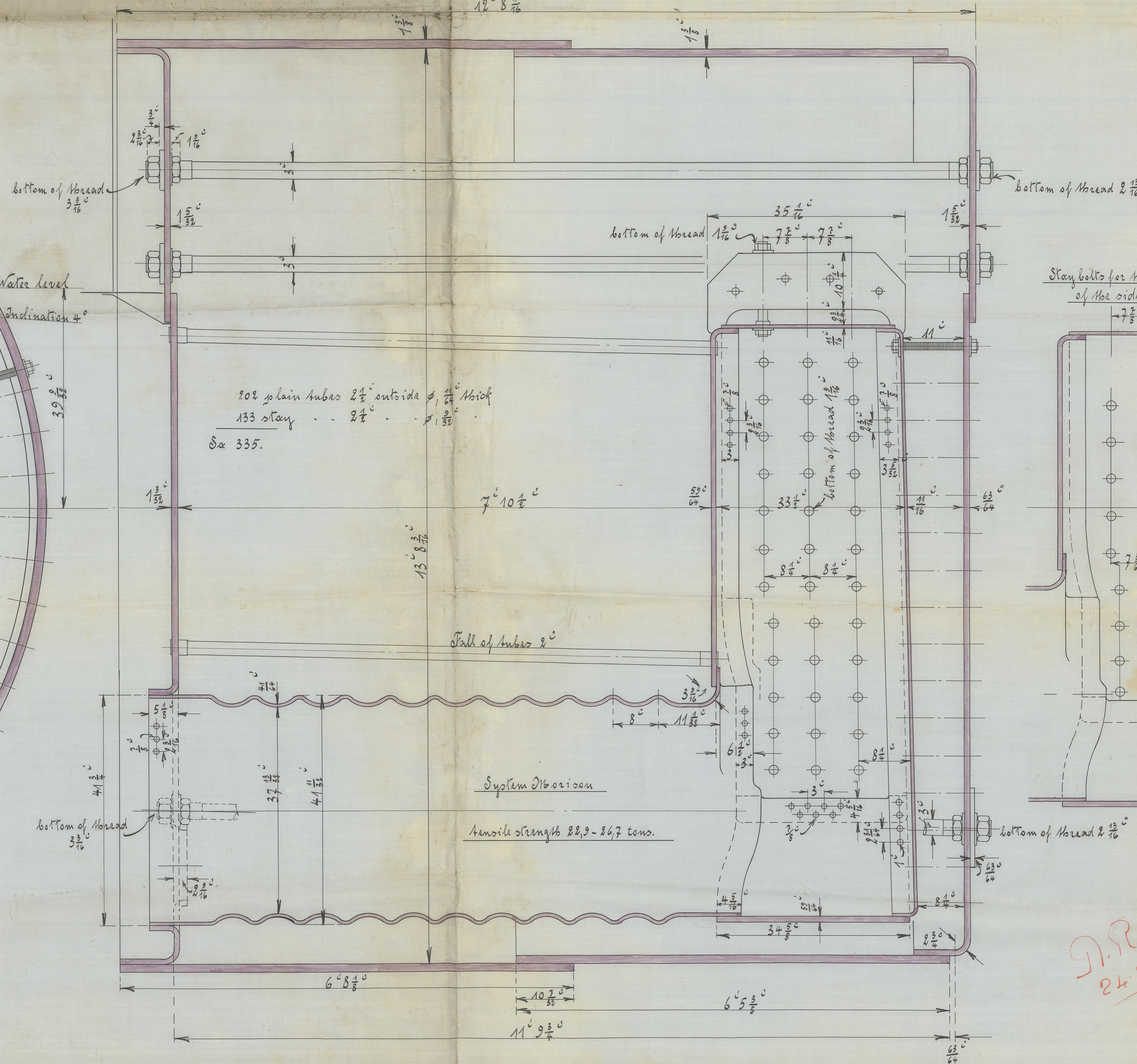
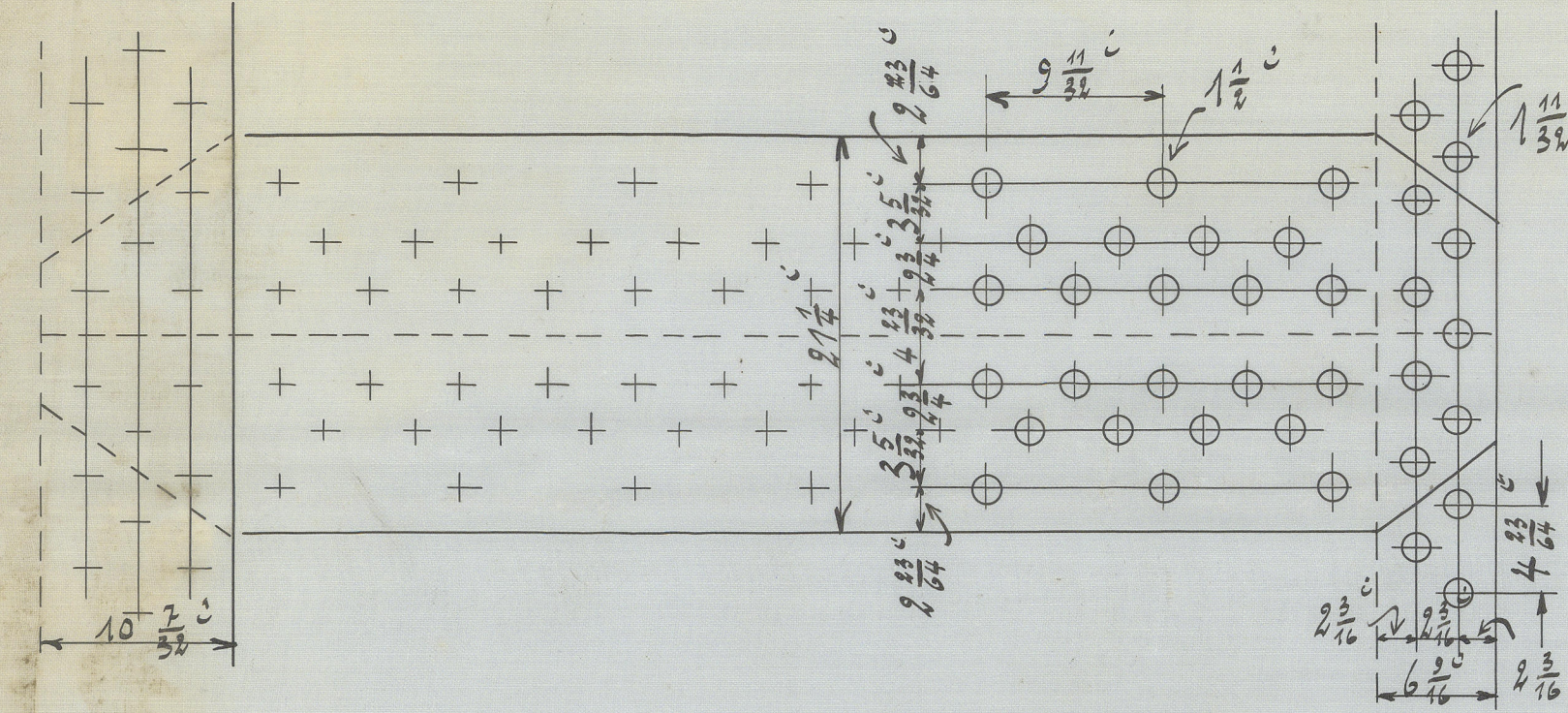
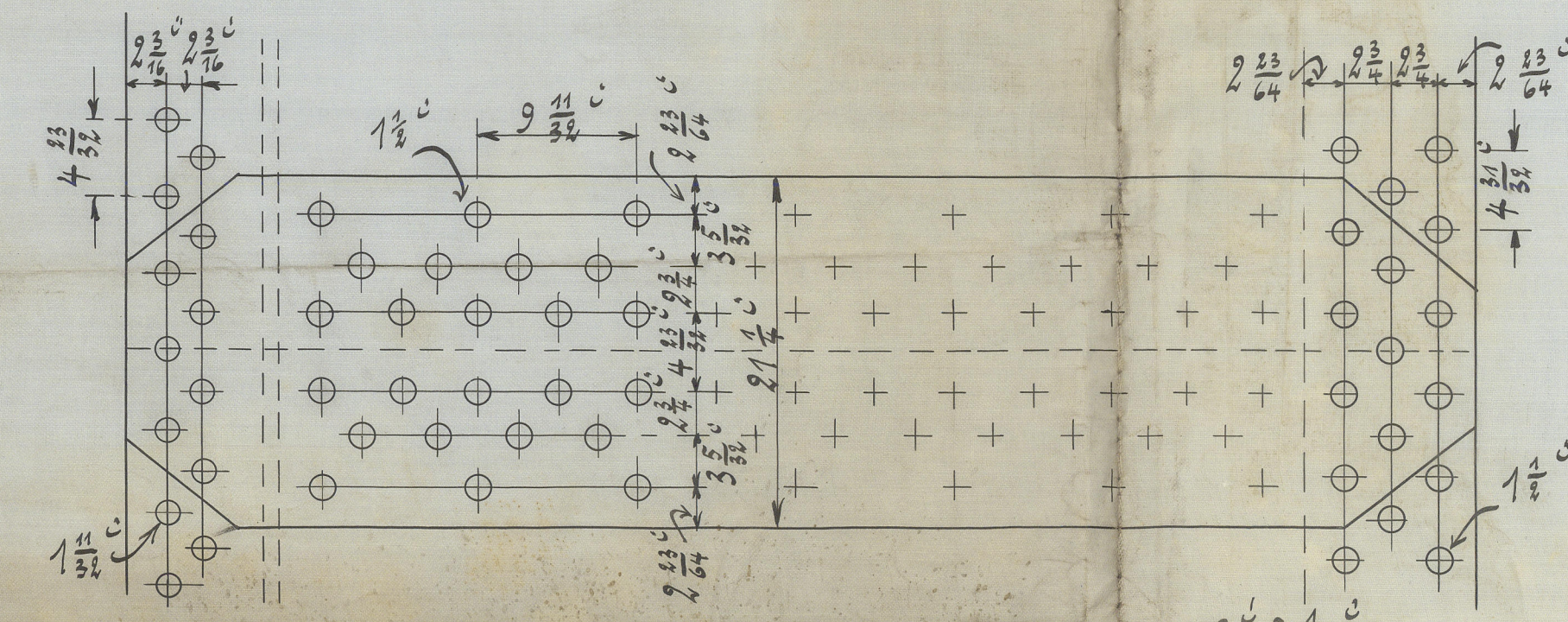
All the other material 22.9 - 26.7 tons per sq. inch tensile strength.

Elongation 26 per cent.

All stay bolts with nuts and washers, material Feinforneisen

Tensile strength 25.4 - 28.6 tons per sq. inch.

Thickness of shell plate:  $T = \frac{213 \times 166}{22 \times 84.1} + 2 = 19.1 + 2 = \frac{21.1}{16} = 1\frac{5}{16}$



J.R. 96  
24.2.10

JRM.  
22/2/10



W520-0073

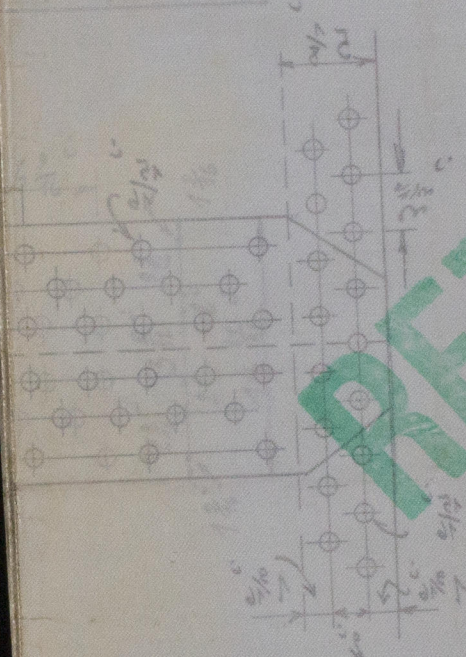
Re: *part of No. 238.*

*made at 10/10/10*

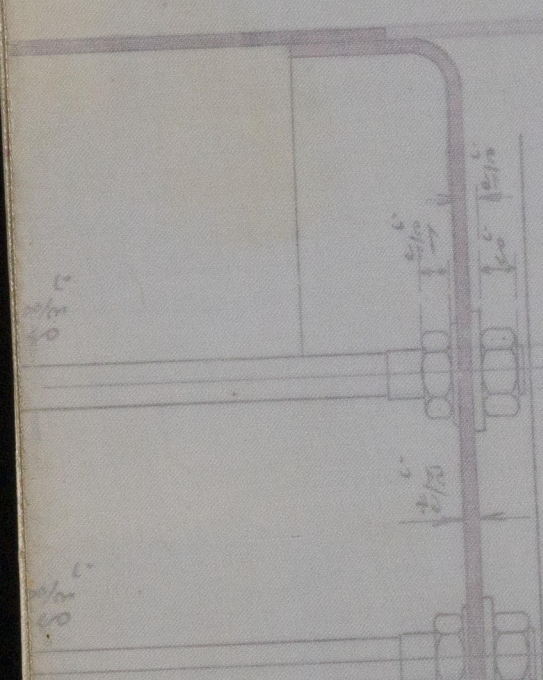
*334.*

*Donkey Bales*

*1:40*



RETAIN



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Heating surface — 1076 square feet.  
 Grate — 45 " "  
 Working pressure — 121 lbs. per sq. inch.  
 Hydrant — 132 " " "

24/2/10

# Steel Donkey Boiler for ship 238.

Fab. C. Tecklenborg R. G.

to be classed 100 A 1 steel.

Bremerhaven-Gesamünde.

Ob: 334.

1:10.

Material: Siemens Martin - Steel.

Shell plating, butt straps and girders: Tensile strength 26.7 - 30.5 tons per sq. inch.

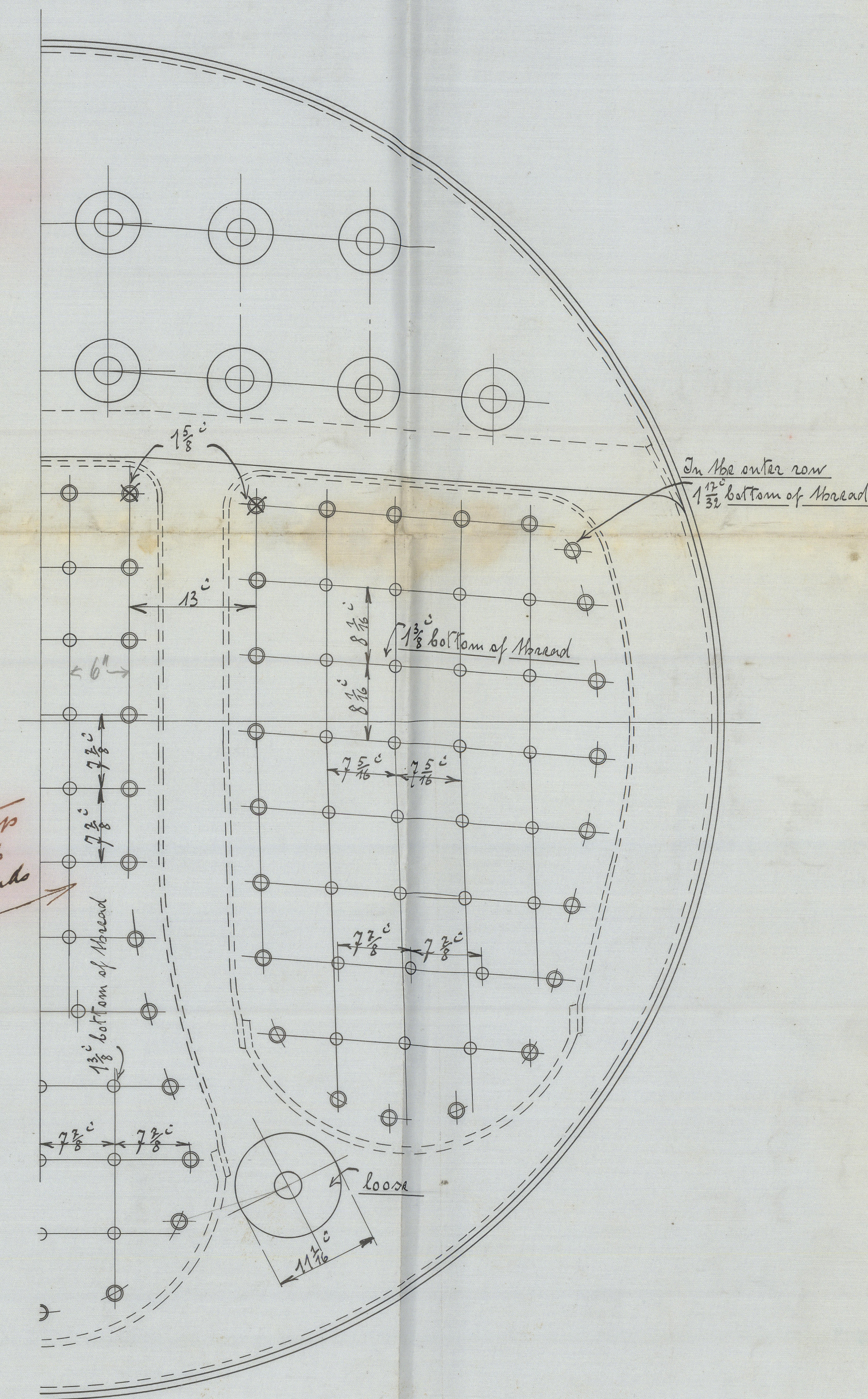
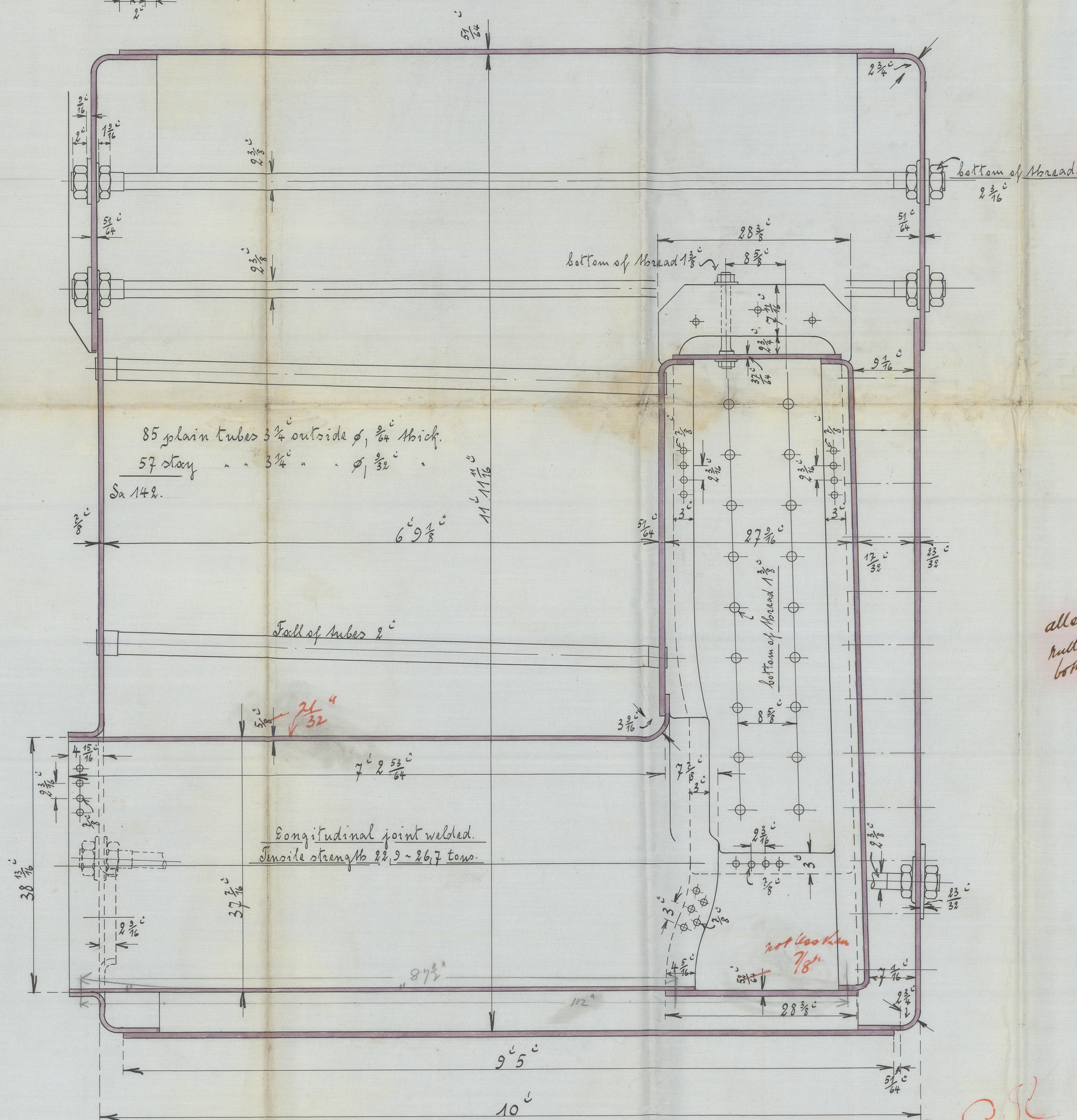
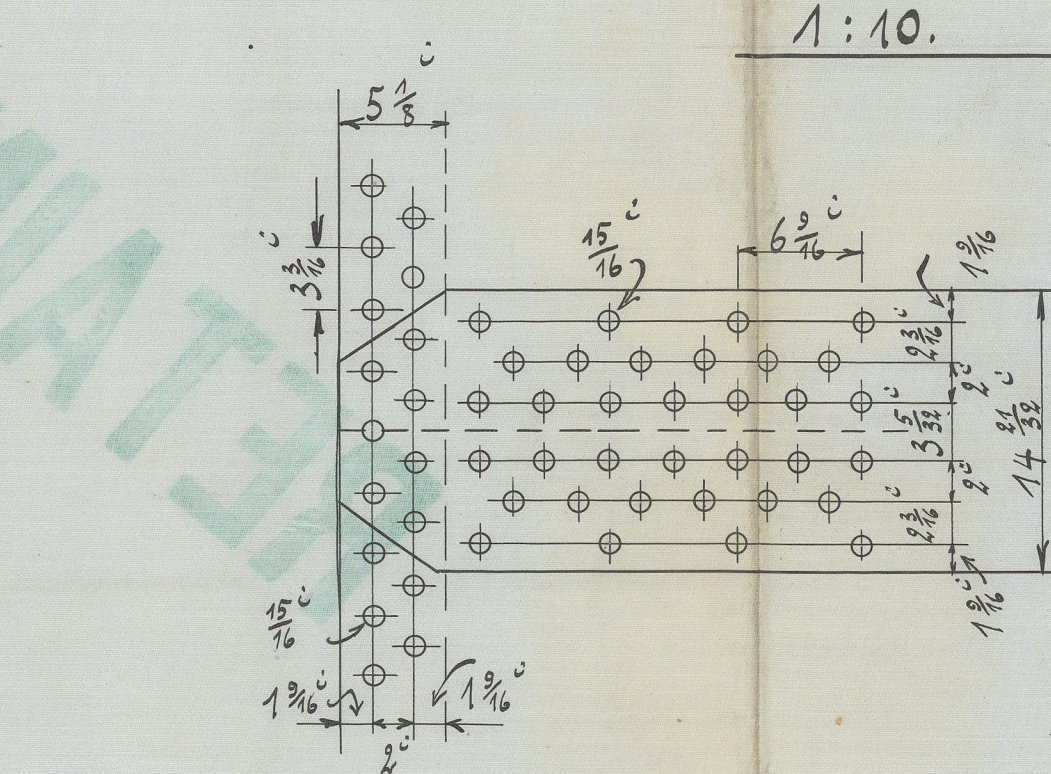
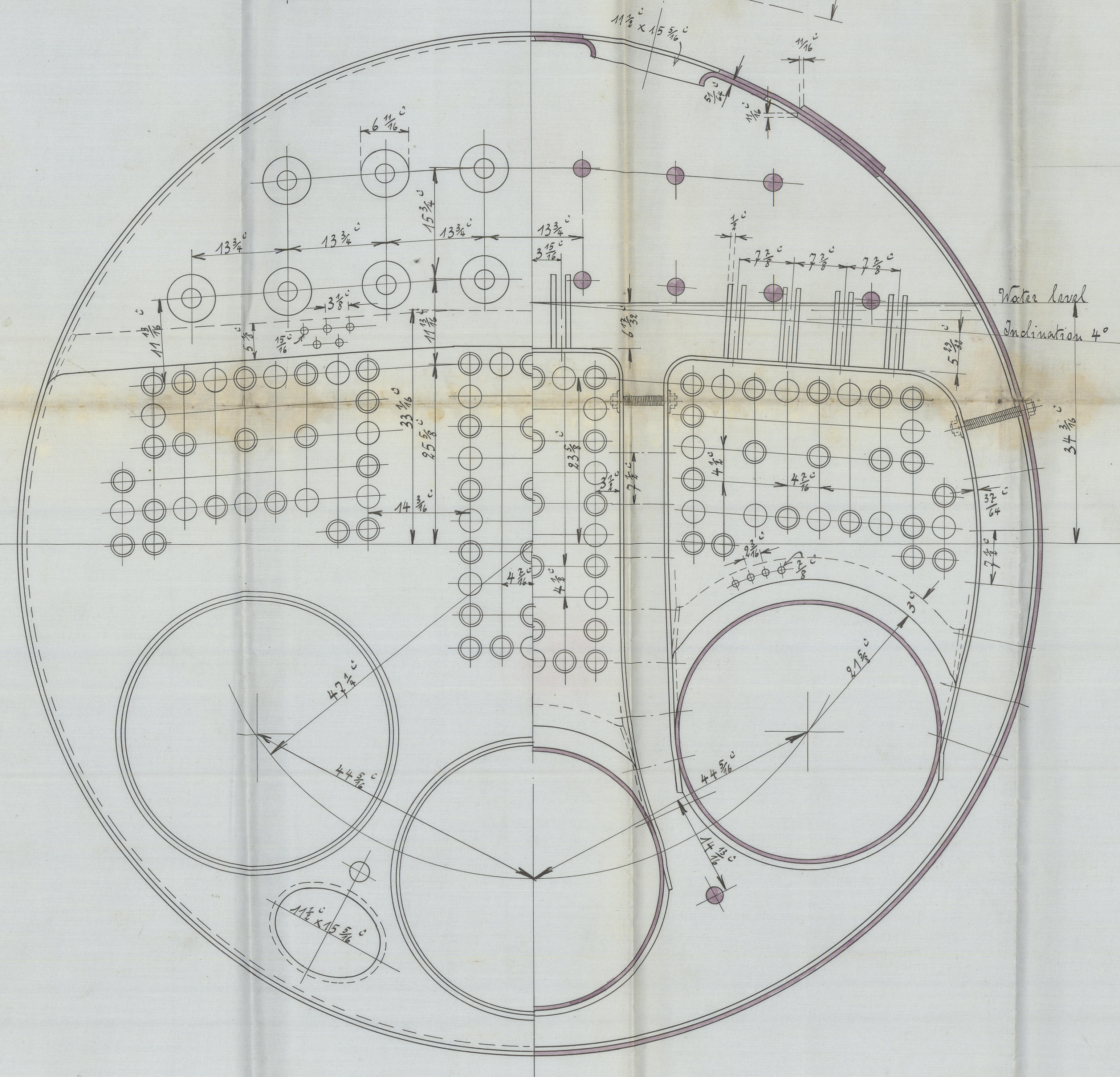
Elongation 24 - 25.5 per cent

All the other material: Tensile strength 22.9 - 26.7 tons per sq. inch.

Elongation 26 %

All stay bolts with nuts and washers; material: Feinkornisen  
 tensile strength 25.4 - 28.6 tons per sq. inch.

$$\text{Thickness of shell plate } T = \frac{181 \cdot 144 \cdot 4}{22 \cdot 85.5} + 2 = 9.28 + 2 = 11.28 = \frac{45}{64} \text{ inch}$$



0816  
24/2/10  
J.P.S.  
24-2-10